查询FTR-K1供应商

FUJITSU THE POSSIBILITIES ARE INFINITE

POWER RELAY

1 POLE - 16A LOW PROFILE TYPE

FTR-K1 Series

RoHS compliant

■ FEATURES

- Low profile (height: 15.7mm)
- HIGH ISOLATION5
  Insulation Distance (between coil and contacts: 10mm min.)
  Dielectric strength: 5KV
  Surge strength: 10KV
- Class F coil
- UL, Flammability 94V-0
- Cadmium free contacts
- SAFETY STANDARDS
  UL, CSA, VDE, SEMKO approved
  UL, CSA TV-5 rating approved
- RoHS Compliant since production

■ ORDERING INFORMATION

[Example] FTR-K1 (a) C (b) K (c) 005 (d) W (e) – ** (f)

(a)	Series Name	FTR-K1: FTR-K1 Series
(b)	Contact Arrangement	A : 1 form A (SPST-NO) C : 1 form C (SPDT) (standard type "K" only)
(c)	Coil Type / Enclosure	K : Standard (400 mW) / Flux free (16 A, 12A contacts only) L : High Sensitive (250 mW)/ Flux free (10A, contacts only)
(d)	Nominal Voltage	005 : 5 VDC, 006 : 6VDC, 009 : 9VDC 012 : 12VDC 018 : 18 VDC (standard type only) 022 :022VDC (standard type only), 024 : 24VDC, 048 : 48VDC
(e)	Contact Material / TV type	W : AgSnO2 T : AgSnO2 / TV-5 rated (1form A 16A type only)
(f)	Contact rated / Terminal pitch/ Temperature range	Nil :16A/5.0mm/-40 to +85˚C (standard type "K" only) -MA : 12A/3.5mm/-40 to +85˚C (standard type "K" only) -LA :10A/3.5mm/-40 to +85˚C (high sensitive "L" only) -LB :10A/5.0mm/-40 to +105˚C (high sensitive type "L" only)

Actual marking does not carry the type name : "FTR"
E.g.: Ordering code: FTR-K1CK012W Actual marking: K1CK012W

■ SAFETY STANDARD AND FILE NUMBERS

UL508, 873 (File No. E63614)
C22.2 No.1and No. 14 (File No. LR40304)
VDE 0435, 0631, 0700, 0860
SEMKO EN 610558-I, 61095

Type	Nominal Voltage	Contact Rating
FTR-K1 16A type	5 to 48 VDC	1/2 HP 125VAC/ 1HP 277VAC 16A 277VAC/24VDC resistive Pilot duty B300
FTR-K1 10A type	5 to 48 VDC	1/3 HP 125VAC/ 1/2HP 277VAC 10A 277VAC/24VDC resistive Pilot duty B300
FTR-K1 TV-5	5 to 48 VDC	TV-5 120VAC 1/2 HP 125VAC/ 1HP 277VAC 16A 277VAC/24VDC resistive Pilot duty A300

■ SPECIFICATIONS

Item			FTR-K1CK ( ) W (Standard)	FTR-K1AK ( ) T (Standard)	FTR-K1AL ( ) W-LB (High sensitive)
Contact	Arrangement		1 form C	1 form A	
	Material		Silver alloy		
	Resistance (initial)		Maximum 100mΩ (at 1A 6VDC)		
	Rating		16A, 250VAC/24VDC		10A 250VAC
	Maximum Carrying Current		16A		10A
	Maximum Switching Rating		4,000VA / 384W		2,500VAC
	Maximum Switching Voltage		440VAC / 300VDC		440 VAC
	Minimum Switching Load*1		10mA 5VDC		
	Maximum Switching Current		16A		10A
	Minimum Inrush Current		---	120VAC 78A(TV5)	---
Coil	Power		400 mW		250 mW
	Operating Temperature		-40° C to +85° C (no frost)		-40° C to +105° C (no frost)
Time Value	Operate Time (without diode)		Maximum 15ms (at nominal voltage, no bounce)		
	Release Time (without diode)		Maximum 5ms (at nominal voltage, no bounce)		
Insulation	Resistance (at 500VDC)		Minimum 1,000 Mohms		
	Dielectric Strength	Between open contacts	1,000 VAC 1 minute		
		Between coil and contacts	5,000 VAC 1 minute		
	Surge Strength		10,000V (at 1.2 x 50 micro sec.)		
Life	Mechanical		20 x 10^6 operations minimum		
	Electrical	AC contact rating	50 x 10^3 ops. minimum	100 x 10^3 ops. minimum	150 x 10^3 ops. min. (at 105 degrees)
		DC contact rating	30 x 10^3 ops. min.	100 x 10^3 ops. min.	---
		Lamp load (TV-5)	---	25 x 10^3 ops. min.	---
Other	Vibration Resistance	Misoperation	10 to 500 Hz, 5gn (double amplitude of 0.35mm) 10 to 55 Hz at double amplitude of 0.7mm		
		Endurance	10-55 Hz, (double amplitude of 1.5mm)		
	Shock Resistance	Misoperation	Min. 100m/s^2 (11±1ms)		
		Endurance	Min. 1,000m/s^2 (6±1ms)		
	Weight		Approximately 13g		

*1 Minimum switching loads mentioned above are reference values. Please perform the confirmation test with the actual load before production since reference values may vary according to switching frequencies, environmental conditions and expected reliability levels.

■ SPECIFICATIONS

Item			FTR-K1CK ( ) W-MA (Standard)	FTR-K1AK ( ) W-MA (Standard)	FTR-K1AL ( ) W-LA (High sensitive)
Contact	Arrangement		1 form C	1 form A	
	Material		Silver alloy		
	Resistance (initial)		Maximum 100mΩ (at 1A 6VDC)		
	Rating		12A, 250VAC/24VDC		10A 250VAC
	Maximum Carrying Current		14A		10A
	Maximum Switching Rating		3,000VA / 288W		2,500VAC
	Maximum Switching Voltage		440VAC / 300VDC		440 VAC
	Minimum Switching Load*1		10mA 5VDC		
	Maximum Switching Current		12A		10A
	Minimum Inrush Current		---	---	---
Coil	Operating Temperature		-40° C to +85° C (no frost)		
Time Value	Operate Time (without diode)		Maximum 15ms (at nominal voltage, no bounce)		
	Release Time (without diode)		Maximum 5ms (at nominal voltage, no bounce)		
Insulation	Resistance (at 500VDC)		Minimum 1,000 Mohms		
	Dielectric Strength	Between open contacts	1,000 VAC 1 minute		
		Between coil and contacts	5,000 VAC 1 minute		
	Surge Strength		10,000V (at 1.2 x 50 micro sec.)		
Life	Mechanical		20 x 10^6 operations minimum		
	Electrical	AC contact rating	100 x 10^3 ops. minimum		100 x 10^3 ops. min.
		DC contact rating	100 x 10^3 ops. min.		---
		Lamp load (TV-5)	---	---	---
Other	Vibration Resistance	Misoperation	10 to 500 Hz, 5gn (double amplitude of 0.35mm) 10 to 55 Hz at double amplitude of 0.7mm		
		Endurance	10-55 Hz, (double amplitude of 1.5mm)		
	Shock Resistance	Misoperation	Min. 100m/s^2 (11±1ms)		
		Endurance	Min. 1,000m/s^2 (6±1ms)		
	Weight		Approximately 13g		

■ COIL DATA CHART

Standard type (type K)

Model		Nominal Voltage	Coil Resistance (± 10%)	Must Operate Voltage	Must Release Voltage	Nominal Power
Standard	TV-					
FTR-K1CK005W	FTR-K1AK005T	5VDC	62 Ω	3.5VDC	0.5VDC	400mW
FTR-K1CK006W	FTR-K1AK006T	6VDC	90 Ω	4.2VDC	0.6VDC	400mW
FTR-K1CK009W	FTR-K1AK009T	9VDC	202 Ω	6.3VDC	0.9VDC	400mW
FTR-K1CK012W	FTR-K1AK012T	12VDC	360 Ω	8.4VDC	1.2VDC	400mW
FTR-K1CK018W	FTR-K1AK018T	18 VDC	810 Ω	12.6 VDC	1.8 VDC	400mW
FTR-K1CK022W	FTR-K1AK022T	22VDC	1,210 Ω	15.4VDC	2.2VDC	400mW
FTR-K1CK024W	FTR-K1AK024T	24VDC	1,440 Ω	16.8VDC	2.4VDC	400mW
FTR-K1CK028W	FTR-K1AK028T	28VDC	1,960 Ω	19.6VDC	2.8VDC	400mW
FTR-K1CK048W	FTR-K1AK048T	48VDC	5,360 Ω	33.6VDC	4.8VDC	430mW

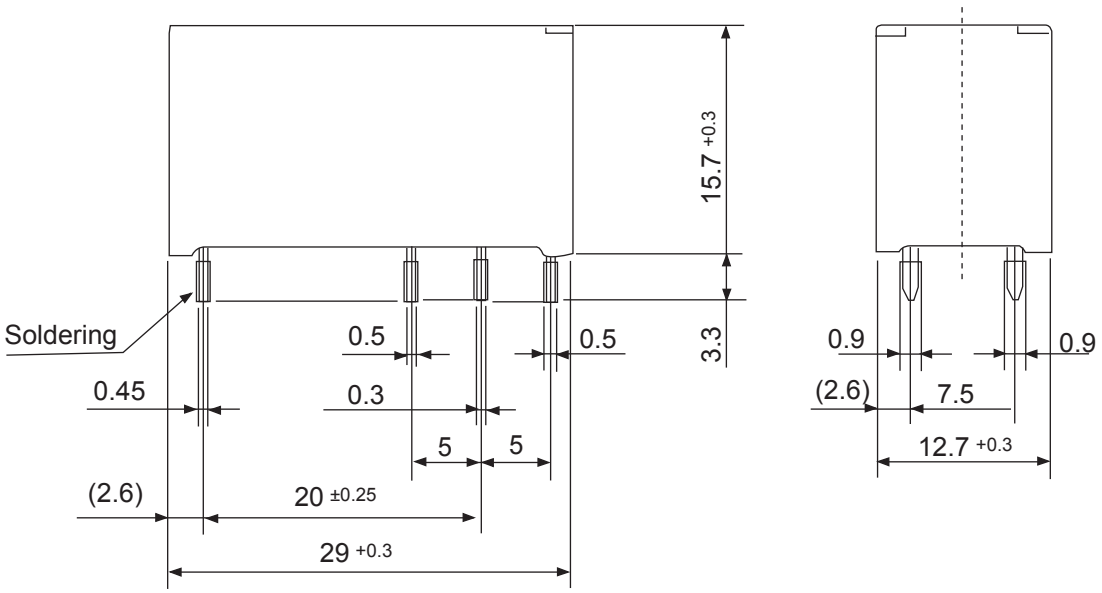
High sensitive type (type L)

Model	Nominal Voltage	Coil Resistance (± 10%)	Must Operate Voltage	Must Release Voltage	Nominal Power
High sensitive type (type L)					
FTR-K1AL005W-LB	5VDC	100 Ω	3.75VDC	0.5VDC	250mW
FTR-K1AL006W-LB	6VDC	145 Ω	4.5VDC	0.6VDC	250mW
FTR-K1AL009W-LB	9VDC	325 Ω	6.75VDC	0.9VDC	250mW
FTR-K1AL012W-LB	12VDC	575 Ω	9VDC	1.2VDC	250mW
FTR-K1AL018W-LB	18VDC	1,300 Ω	13.5VDC	1.8VDC	250mW
FTR-K1AL024W-LB	24VDC	2,310 Ω	18VDC	2.4VDC	250mW
FTR-K1AL048W-LB	48VDC	9,216 Ω	36VDC	4.8VDC	250mW

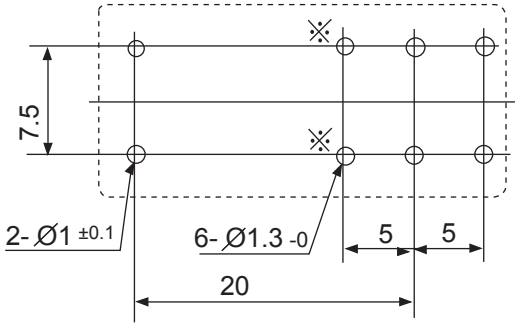
Note: All values in the table are measured at 20°C.

■ DIMENSIONS

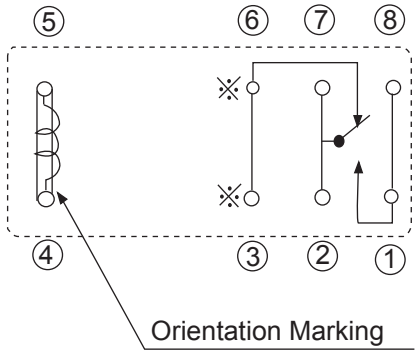
FTR-K1CK ( ) W / FTR-K1AK ( ) T / FTR-K1AL ( ) W-LB



I PC Board mounting hole layout
(BOTTOM VIEW)



I Schematics (BOTTOM VIEW)

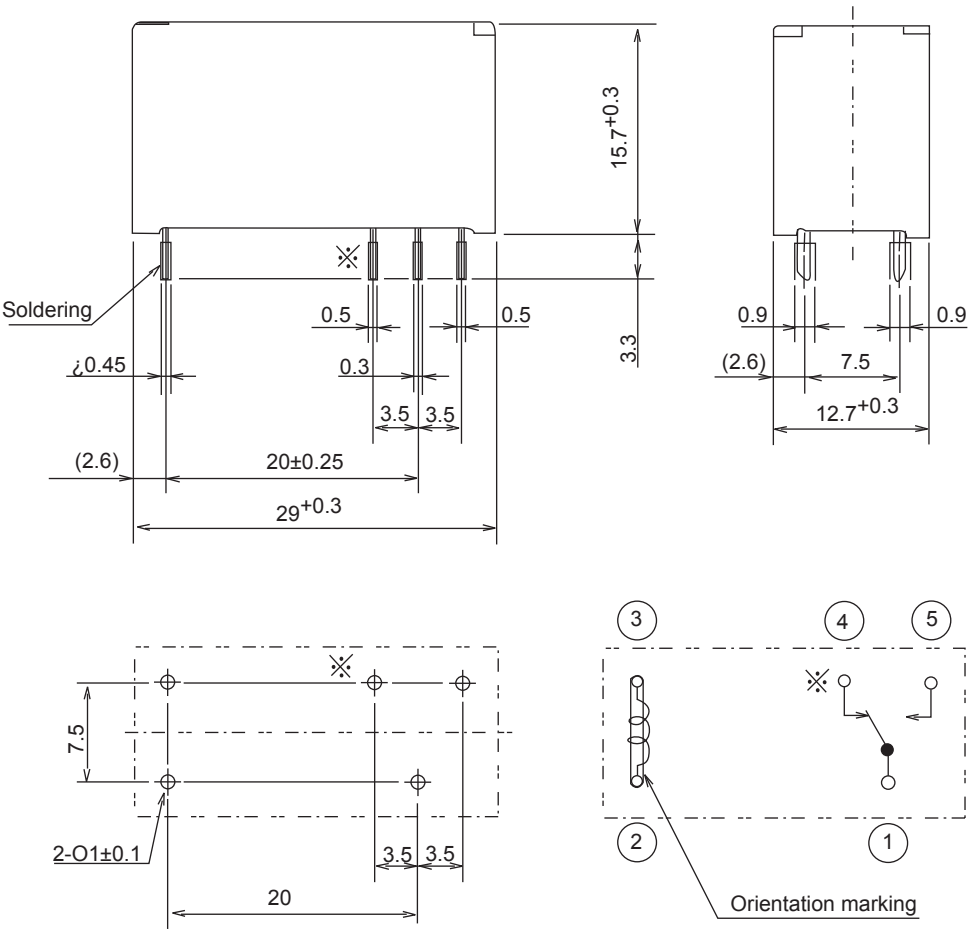


Unit: mm

Note: In case of 1 form A, there is no "Stationay contact arm (NC)" (※).

■ DIMENSIONS

FTR-K1CK ( ) W-MA / FTR-K1AK ( ) W-MA / FTR-K1AL ( ) W-LA



Unit: mm

Note: In case of 1 form A, there is no "Stationay contact arm (NC)" (※).

RoHS Compliance and Lead Free Relay Information

1. General Information

- Relays produced after the specific date code that is indicated on each data sheet are lead-free now. Most of our signal and power relays are lead-free. Please refer to Lead-Free Status Info. (http://www.fujitsu.com/us/downloads/MICRO/fcai/relays/lead-free-letter.pdf)
- Lead free solder paste currently used in relays is Sn-3.0Ag-0.5Cu.
- All signal and most power relays also comply with RoHS. Please refer to individual data sheets. Relays that are RoHS compliant do not contain the 5 hazardous materials that are restricted by RoHS directive (lead, mercury, chromium IV, PBB, PBDE).
- It has been verified that using lead-free relays in leaded assembly process will not cause any problems (compatible).
- “LF” is marked on each outer and inner carton. (No marking on individual relays).
- To avoid leaded relays (for lead-free sample, etc.) please consult with area sales office.
- We will ship leaded relays as long as the leaded relay inventory exists.

Note: Cadmium was exempted from RoHS on October 21, 2005. (Amendment to Directive 2002/95/EC)

2. Recommended Lead Free Solder Profile

- Recommended solder paste Sn-3.0Ag-0.5Cu.

Reflow Solder condtion

Flow Solder condtion:

Pre-heating:	maximum 120˚C
Soldering:	dip within 5 sec. at 260˚C soler bath

Solder by Soldering Iron:

Soldering Iron Temperature:	maximum 360˚C
Duration:	maximum 3 sec.

We highly recommend that you confirm your actual solder conditions

3. Moisture Sensitivity

- Moisture Sensitivity Level standard is not applicable to electromechanical realys.

4. Tin Whisker

- Dipped SnAgCu solder is known as low risk tin whisker. No considerable length whisker was found by our in house test.

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